

D1 and E1 >

1 (Thrice Amended) A photoelectric converter comprising a photoelectric conversion element of a laminated structure comprising:  
a first electrode layer;  
an insulation layer for blocking the passage of holes and electrons;  
a photoelectric conversion semiconductor layer;  
an injection blocking layer for blocking the injection of only one of the holes or the electrons to the photoelectric conversion semiconductor layer at a time;  
a second electrode layer; and  
a switching means for operating the photoelectric converter by switching through the following three operation modes a) through c):  
a) an idling mode for emitting one of the holes or the electrons from the photoelectric conversion element;  
b) a photoelectric conversion mode for accumulating one of the holes or the electrons generated in accordance with an amount of incident light; and  
c) a refresh mode for emitting the holes or the electrons accumulated in the photoelectric conversion element.

2. (Not Currently Amended) The photoelectric converter according to claim 1, wherein a potential difference  $V_{dg}$  obtained by subtracting the potential of the second electrode layer from the potential of the first electrode layer of the photoelectric conversion element in the idling mode is smaller than a potential difference  $V_{dg}$  obtained by subtracting the potential of the second electrode layer from the potential of the first electrode layer of the photoelectric conversion element in the photoelectric conversion mode.

*D2* *sub E1* 3. (Twice Amended) The photoelectric converter according to claim 1, wherein a recess mode of the photoelectric conversion element is provided for by applying a zero electric field to each layer before the idling mode.

*D3* *sub E1* 7. (Amended) The photoelectric converter according to claim 1, wherein:  
a plurality of the photoelectric conversion elements are arranged one-dimensionally or two-dimensionally,  
a switching element is connected for each of the photoelectric conversion elements,  
all the photoelectric conversion elements are divided into a plurality of n blocks,

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a light signal from the photoelectric conversion elements divided into n blocks is output with a matrix signal wiring by operating the switching element for each of the blocks,

an intersection part of the matrix signal wiring comprises a lamination structure in which at least a first electrode layer, an insulating layer, a semiconductor layer and a second electrode layer are provided in this order, each corresponding to the first electrode layer, the insulating layer, the photoelectric conversion semiconductor layer, and the second electrode layer of the photoelectric conversion element.

8. (Thrice Amended) A system comprising:

a photoelectric converter comprising a photoelectric conversion element of a laminated structure comprising:

a first electrode layer;

an insulation layer for blocking the passage of holes and electrons;

a photoelectric conversion semiconductor layer;

an injection blocking layer for blocking the injection of only one of the holes or the electrons to the photoelectric conversion semiconductor layer at a time;

a second electrode layer; and

a switching means is provided for operating the photoelectric converter by switching through the following three operation modes a) through c):

a) an idling mode for emitting one of the holes or the electrons from the photoelectric conversion element;

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cont.

b) a photoelectric conversion mode for accumulating one of the holes or the electrons generated in accordance with an amount of incident light; and

c) a refresh mode for emitting the holes or the electrons accumulated in the photoelectric conversion element;

a signal processing means for processing a signal from the photoelectric converter;

a recording means for recording a signal from the signal processing means;

a display means for displaying a signal from the signal processing means;

an electric transmission means for electrically transmitting a signal from the signal processing means; and

a radiation source for generating radiation.

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9. (Not Currently Amended) The photoelectric converter according to claim 2, wherein the potential  $V_{dg}$  is greater than zero.

10. (Not Currently Amended) The system according to claim 8, further comprising a phosphor for converting a wavelength of radiation.

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--11. (New) The photoelectric converter according to Claim 1, further comprising a switching element comprising a thin film transistor having the same layer construction as the photoelectric converter.--

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